

Climatological Data for January, 1910.
DISTRICT No. 5, UPPER MISSISSIPPI VALLEY.

GEORGE M. CHAPPEL, District Editor.

TEMPERATURE.

The weather was extremely cold from the 1st to the 15th in the extreme northern and from the 3d to the 10th in the central and southern portions of the district, but the latter half of the month was mild for January.

In North Dakota the month opened with the temperature below the normal, and this condition prevailed during the first 15 days. During the first 6 days the temperature was abnormally low, and at most stations, the minimum for the month was recorded on the 3d or 4th. During the latter half of the month the temperature was above the normal, and particularly so on the last 3 days, the maximum for the month occurring generally on the 31st.

The month was considerably warmer than usual in Minnesota, although an unusually cold period extended from the 3d to the 10th.

The average temperature for Wisconsin was 0.5° above the normal, but the small excess is due to the fact that the comparatively high temperature in the northern counties offset the comparatively low temperatures in the southern counties. The greatest excess of temperature was in the northwestern counties, where it amounted to 5.0° . The maximum temperatures for the month were recorded at practically all stations on the 19th or 20th, and were about 40° , while the lowest temperatures were recorded generally on the 7th, and ranged from -20° to -38° . The minimum temperatures were below the freezing point each day at practically all stations during the entire month, and they were below zero continuously from the 3d to the 10th.

The weather was unseasonably cold in Iowa from the 3d to the 10th, but the remainder of the month, with the exception of two or three days, was mild, so that the average temperature for the month was only a little below the normal. The 6th and 7th were the coldest days; the lowest temperature occurring generally on the 6th, when the minimum ranged from -8° to -23° over the southern and from -17° to -35° over the northern counties. There have been 6 colder Januaries during the past 21 years, but the minimum for the State, for the past month, was lower than in any January since 1892, and at a few stations in the northern counties the minimum was lower than it has been in any January for the past 22 years. The 19th and 25th were generally the warmest days, but there were only 2 or 3 days in the month on which the minimum temperature was above the freezing point, even in the extreme southern portion of the State.

January, 1910, was rather unfavorable for building and other outdoor occupations over northeastern Missouri. The mean temperature for the month was above the normal immediately along the Mississippi River, but in the interior it was below the normal. The first 2 or 3 days were moderate, but after the 3d a cold wave spread over the section, and markedly low temperatures prevailed until the 10th; zero temperatures were recorded on several days, and ranged from -2° to -17° on the 6th and 7th. After the 15th the weather moderated somewhat, with several bright and pleasant days during the third and fourth weeks, but the maximum temperature was below 50° , except on a few days.

The deficiency in temperature over that portion of Indiana within this district was chiefly due to the extreme cold weather that prevailed from the 3d to the 10th, the remainder of the month having temperatures somewhat above the normal, which reduced to a large extent the deficiency of the first decade. The coldest day was the 7th, when temperatures from -5° to -15° were recorded throughout the section.

While the mean monthly temperature for Illinois was practically normal, great inequalities occurred. The month opened with moderate winter temperature, which was followed by a severe cold spell of short duration, when the lowest temperatures since February, 1905, were registered in portions of the State. In fact, the low temperatures registered on the 7th, in the northern border counties, almost equaled the record for extreme cold weather. From the 11th to the close of the month the temperature was generally above the seasonal average.

The monthly mean temperature for the district, as shown by the records of 294 stations, was 16.8° , which is 4.4° above the normal. The highest monthly mean was 36.3° , at Cairo, Ill., and the lowest was 2.2° , at Pembina, N. Dak. The highest temperature reported was 67° , at Du Quoin and Mascoutah, Ill., on the 1st; and the lowest was -40° , at Roseau, Minn., on the 4th.

PRECIPITATION.

The average precipitation was slightly above the normal, but there was a deficiency in several localities, especially over North Dakota, northern Minnesota, southeastern Iowa, Illinois, and the central portion of the Missouri section. Over the northern States, nearly all of the precipitation was in the form of snow, and a large proportion was snow over the southern sections.

In North Dakota the average precipitation was only 0.23 inch, or less than one-half of the normal. The month opened with stormy weather, which prevailed during the first six days, and the greater portion of the precipitation occurred during that period.

In the extreme northwestern counties of Minnesota the average precipitation was about 0.10 inch, but over the southern counties it ranged from 1.50 to 2.50 inches, which is considerably above the normal. More or less general storms occurred on the 5th, 17th, 20th, and 26th. The snowfall ranged from 1 to 15 inches, and the ground was covered with snow throughout the month from 5 to 20 inches in depth.

There was a slight excess of precipitation over Wisconsin, and all of it fell in the form of snow. It was fairly well distributed throughout the month, except in the southern counties, where most of the snow fell during the first half of the month. There were heavy snowstorms on the 4th, 5th, and on the 13th and 14th, which caused considerable delay in traffic in the southern counties, but very little inconvenience resulted in the northern portion of the State. The ground was covered with snow during the entire month.

In Iowa the precipitation was above the normal, except over the southeastern counties, where there was a slight deficiency. Most of it fell in the form of snow during two storms; the first of which occurred on the 4th and 5th, and the second on the 12th and 13th. The fall of snow during these two storms was unusually heavy and caused much delay in railroad traffic, which, together with the severe cold weather during the early part of the month, came very near causing a fuel famine in this and some of the adjacent States. The accumulation of snow also did considerable damage to buildings, especially in the northern part of the State. The roofs of numerous structures collapsed as a result of the weight of snow causing damage estimated at about \$10,000 in the city of Dubuque. Snow flurries occurred at frequent intervals during the latter half of the month, but the amounts of snow were small and only tended to prolong the good sleighing which began on December 5 or 6, 1909.

In Missouri the total precipitation for the month ranged from about 1 to over 2 inches; there being an excess in the southern and extreme northern portions, and a slight deficiency over the central part of the State within District No. 5. The total snowfall ranged from 2 to 7 inches.

There was a deficiency in Indiana near the headwaters of the Iroquois and Kankakee rivers, and an excess at lower points in their courses. Rain or snow occurred at frequent intervals during the month, the proportion which fell as snow being near the average amount for January. The ground was covered during the whole month, affording good sleighing in most localities.

In Illinois the precipitation was mostly in the form of snow or sleet, the latter being general, and in most cases heavy, on the 4th and 5th. In the northern counties the ground has been covered with snow and ice since December 5, 1909, and at the end of January the covering was practically a solid layer of ice averaging about 4 inches in thickness. The snows at times caused a suspension of traffic on the railroads in the northern portion of the State, and the imminence of a coal famine was before many cities and towns for quite a while.

The average precipitation for the district, as shown by the records of 308 stations, was 1.38 inch, which is 0.16 inch above the normal. The greatest amount, 3.36 inches, occurred at Lacona, Iowa, and none occurred at Cando, Langdon, and Pembina, N. Dak. The greatest amount in 24 hours, 1.96 inch, occurred at Steffenville, Mo., on the 12th. Measurable precipitation occurred on an average of 6 days. The average depth of unmelted snowfall for the district was 10.0 inches; the greatest depth was 29.0 inches, at Muscoda, Wis., and none fell at Cando, Langdon, and Pembina, N. Dak.

Sunshine and cloudiness.—The average number of clear days was 11; partly cloudy, 8; and cloudy, 12. The duration of sunshine was below the normal.

Wind.—Northwest winds prevailed. The average hourly wind velocity, as shown by the records of 14 regular Weather Bureau stations in the district, was 8.6 miles; the maximum velocity of the wind was 48 miles per hour, from the northwest, at Devils Lake, N. Dak., on the 1st; and from the southwest, at Cairo, Ill., on the 26th.

The rivers in the northern and central portions of the district were frozen during the entire month, and ice gorges interfered with navigation in the southern portions. The Illinois River was above the flood stage during most of the latter part of the month. At La Salle, Ill., the river was frozen until the 18th, when the reading was 18.8 feet, or 0.8 feet above the flood stage. The river remained above the flood stage during the rest of the month, but no damage resulted as the rise was gradual, and the ice was intact at the end of the month. At Peoria flood stage was reached on the 20th, and it continued above flood the remainder of the month. The highest stage was 16.7 feet on the 29th, 30th, and 31st. (Flood stage is 14.0 feet.) At Beardstown the river was above the flood stage from the 7th to the 9th, and from the 15th until the end of the month. The highest stage was 14.1 feet, or 2.1 feet above flood stage.

The Mississippi at St. Louis, Mo., averaged 18.3 feet for the month, which is the highest average ever recorded for January. Most of the excess was the result of an ice pack below the city. This pack formed during the last week in December and continued until January 14 when a general breakup occurred. At 1:00 a.m. on January 14 the St. Louis gage registered 31.9 feet. The gorge backed the water up as far as Grafton, Ill., the highest water at that place being 13.4 feet on the 14th, but no reports have been received of any damage above the mouth of the Missouri River. The river was frozen at Keokuk, Iowa, and at Hannibal, Mo., except an open stretch below the bridge.

The breaking of the ice gorge between St. Louis, Mo., and Chester, Ill., on the 14th, caused considerable damage as the ice passed away, but no flood stage occurred at Cairo, Ill., although there was a sharp rise.

DRAINAGE AND CONSERVATION NOTES.

The construction of a drainage ditch, to cost \$101,561, has been authorized by the boards of Winnebago and Kossuth counties in Iowa. The ditch will be on the line between the two counties and in one of the big drainage districts in that part of the State.

Surveys have been made for the construction of a large dam on the Cedar River, near Vinton, Iowa, to develop water power. The proposed dam will cost \$450,000.

The army engineers who made the preliminary inspection of the Des Moines River to decide whether or not it was possible to make the river navigable have rendered a favorable report to the Secretary of War, and it is expected that the survey of the river will begin as soon as weather conditions will permit.

HYDROELECTRIC DEVELOPMENT.

The Keokuk and Hamilton Water Power Company began work on January 10, 1910, to develop the power of the Des Moines Rapids of the Mississippi River at Keokuk, Iowa, and Hamilton, Ill.

The developing works will consist of a dam built across the river at the foot of the rapids, and a power house immediately below the dam and parallel with the stream on the Keokuk side.

The dam, including abutments, will be 4,700 feet long, or seven-eighths of a mile. The spillway section will be 4,400 feet in length. The height will be 37 feet above the river bed and its base 43 feet wide. The upstream face will be vertical. The downstream face will be an ogee curve, the upper portion a parabola over which the water will spill, the lower portion an arc of a circle which will throw the water horizontally away from the toe of the dam.

On top of the spillway will be placed 116 steel flood gates, 30 feet wide and 11 feet high, supported by concrete piers. These piers will be 8 feet thick and 29 feet wide. They will be built integral with the dam, being carried down to bed rock on the upstream side. The piers also support an arched bridge from which the gates will be operated by electric hoists. By manipulating these gates the water above the dam will be maintained at a constant level at all seasons.

The dam will be built entirely of massive concrete without reinforcement of any kind. It will be locked firmly into the rock bed of the river and will be practically a monolith.

The construction of the dam will entirely drown out and destroy the Des Moines Rapids Canal with its three locks. In place of these will be built a single large lock on the site of the present lower lock. This lock will be both wider and longer than the present lock. As the number of lockages will be reduced from three to one, and in place of the canal will be substituted a lake of deep water over a mile wide and 40 miles long, it will be seen that the work will result in a great improvement to navigation.

In connection with the lock will be built a large drydock for the construction and repair of floating craft.

The operating head will vary from 35 to 21 feet. There will be developed and for sale 200,000 horsepower. The machinery will be capable of developing 250,000 horsepower.

The first long distance transmission line will be run to St. Louis, and the first power will be sold there and in Keokuk. As the power market develops transmission lines will be run in other directions radiating from Keokuk.

It is expected that the initial installation of 100,000 horsepower will be completed in $2\frac{1}{2}$ years.

MONTHLY WEATHER REVIEW.

JANUARY, 1910

TABLE 1.—Climatological data for January, 1910. District No. 5, Upper Mississippi Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.			Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.			Greatest in 24 hours.	Total snowfall unmeted.			
					Highest.	Date.	Lowest.							Total.	Greatest in 24 hours.	Total.					
North Dakota.																					
Amenia.	Cass.	954	12	8.0	+ 1.6	46	19	-23	4	55	0.40	- 0.10	0.20	4.0	2	8	10	13	nw.	C. E. Wood.	
Bottineau.	Bottineau.	1,638	14	5.0	+ 4.8	34	31	-28	3	33	0.40	- 0.09	0.20	0.0	3	10	9	12	nw.	J. A. Kemp.	
Cando.	Towner.	1,488	8	6.8 ^a	+ 7.8	40 ^b	26 ^c	-34	4	40 ^d	0.00	- 0.46	0.00	0.0	0	0	0	0	sw.	E. T. Judd.	
Crosby.	Williams.	3	10.2			38	31	-30	3	42	0.29		0.11	4.0	4	19	5	7	w.	H. C. Kaschau.	
Devils Lake.	Ramsey.	1,482	4	8.8	+ 8.3	38	19	-26	3	33	0.10	- 0.50	0.09	1.0	3	7	11	13	nw.	U. S. Weather Bureau.	
Donnybrook.	Ward.	1,760	10	12.0	+ 10.1	48	25	-31	3	39	0.20	- 0.24	0.10	2.0	3	20	3	8	w.	C. J. De Vore.	
Dunseith.	Rolette.	12	8.8	+ 3.9		38	22 ^e	-27	3	33	T.	- 0.47	T.	T.	0	25	2	4	nw.	L. H. Trowbridge.	
Edmore.	Ramsey.	1,524	4	9.2		35	31	-20	3	42	0.55	- 0.10	0.30	5.0	0	13	15	3	nw.	H. R. Aslakson.	
Forman.	Sargent.	1,249	15	12.0	+ 4.5	40	1	-30	4	40	0.50	- 0.32	0.19	2.8	2	7	9	15	n.	A. Maltby.	
Grafton.	Walsh.	827	12	8.8	+ 7.4	37	31	-27	4	31	0.28	- 0.20	0.17	7	17				sw.	H. La Moure.	
Granville.	McHenry.	1,504	3	6.8		38	31	-31	3	46	0.12		0.08	1.5	1	1	1	1	nw.	W. A. Christiansen.	
Hannah.	Cavalier.	1,568	4	8.5		38	31	-31	4	40	0.09		0.05	0.6	2	20	5	6	nw.	J. Moffatt.	
Hansboro.	Towner.	1,568	2	8.6		36	21	-29	4	40	0.09		0.10	1.6	3	8	13	8	s.	Geo. Dale.	
Hillsboro.	Trail.	901	4	10.8		41	31	-23	4	35	0.16		0.20	2.5	5	5	5	5	nw.	M. H. Norman.	
Lakota.	Nelson.	1,519	3	7.8		36 ^f	31	-29 ^f	4	29 ^f	0.37		0.20	0.5	0	17	4	10	w.	C. R. Pettes.	
Langdon.	Cavalier.	1,615	14	6.9		35	31	-26	4	34	0.00		0.00	0.0	0	0	0	0	sw.	J. Woolner.	
Larimore.	Grand Forks.	1,134	14								0.20	- 0.08		2.0						S. R. Britton.	
Lisbon.	Ransom.	1,091	5	6.7		37	20 ^f	-32	4	37	0.60		0.30	6.0	3	18	5	8	nw.	H. K. Adams.	
McKinney.	Ward.	1,640	15	8.2	+ 4.7	39	1	-33	3	54	0.20	- 0.13	0.10	2.0	2	7	21	3	nw.	N. P. Swenson.	
Manfred.	Wells.	1,605	8	9.3		40	31	-30	3	43	0.20		0.10	2.0	2	11	17	3	nw.	P. B. Anderson.	
Mayville.	Trail.	975	14	11.0	+ 2.8	41	31	-25	4	35	0.03	- 0.20	0.02	0.3	2	13	7	11	n.	M. N. Pope.	
Minot.	Ward.	1,557	11	11.0 ^a	+ 4.7	43 ^b	31	-29	3	46	0.05	- 0.35	0.03	0.5	1	23	2	6	w.	J. J. Bates.	
Winkler.	Walsh.	820	16	8.7	+ 6.8	38	31	-24	3	36	0.16	- 0.36	0.03	7					nw.	S. S. Marsh.	
Oriska.	Barnes.	1,270	4																	W. E. Williams.	
Park River.	Walsh.	998	6	8.8		38	31	-28	4	45	T.	T.	T.	0	0	11	10	10	w.	A. Heyward.	
Pembina.	Pembina.	789	11	2.2	+ 1.8	36	31	-35	3	32	0.00	- 0.79	0.00	0.0	0	0	0	0	sw.	C. W. Shumaker.	
Portal.	Ward.	1,954	15	6.9 ^a	+ 1.7	40 ^b	22	-32	4	42 ^c	0.60	+ 0.06	0.20	8.0	4	9	13	9	nw.	M. S. Davis.	
Power.	Richland.	1,020	17	6.9 ^a	+ 1.7	40 ^b	22	-32	4	42 ^c	0.60	+ 0.06	0.20	8.0	4	9	13	9	nw.	J. A. Power.	
Pratt.	McHenry.	5	6.8			35	17	-34	3	51	T.	T.	T.	0	22	1	8	nw.	C. H. Butts.		
University.	Grand Forks.	830	18	8.1	+ 3.6	38	31	-28	7	41	0.20	- 0.34	0.65	2.0	4	7	7	17	nw.	W. R. Holgate.	
Wahpeton.	Richland.	982	18	8.2	- 0.3	35	19	-25	6	29	T.	- 0.40	T.	T.	0	9	8	14	nw.	E. G. Burch.	
Walhalla.	Pembina.	966	5																	C. H. Lee.	
Westhope.	Bottineau.	3	6.3			35	17	-32	3	41	0.10		0.03	4	18	7	6	w.	J. D. Currie.		
Willow City.	do.	1,471	16	9.2 ^b	+ 8.1	35	19	-15	3	19	0.05	- 0.34	0.05	0.5	1	13	6	12	nw.	M. A. Ostby.	
Albert Lea.	Freeborn.	1,229	20	11.9	- 1.1	33	17 ^f	-23	9	30	2.00	+ 1.16	0.80	20.0	6	8	9	14	nw.	Edward Carey.	
Alexandria.	Douglas.	1,391	16	10.7	+ 3.2	37	19	-26	4	37	0.47	- 0.21	0.20	8.2	7	12	4	15	nw.	P. O. Unumb.	
Angus.	Polk.	870	8	7.8		36	19	-25	3	37	0.10		0.10	1	1	10	11	10	s.	John Nadvornik.	
Bagley.	Clearwater.	4	7.1			33	17	-26	3	42	0.26		0.26	2.0	1	14	10	7	w.	Jens Nelson.	
Baudette.	Beltrami.	1,084	1	7.6		36	19	-36	4	40	0.16		0.14	2.2	2	16	5	10	nw.	Franz W. Schmidt.	
Beardley.	Bigstone.	1,000	17	14.4 ^a	+ 4.0	43 ^b	19	-22	3	37 ^c	0.14		0.14	7 ^e	8 ^e	11 ^e			sw.	Roy A. Smith.	
Beaulieu.	Mahnomen.	1,200	8	10.6		35	1	-29	4	37	0.15		0.15	2.0	1	12	11	8	sw.	Dr. L. A. Parkinson.	
Bird Island.	Renville.	1,039	20	13.2	+ 2.8	37	19	-22	6	30	0.47	- 0.16	0.21	4.7	7	9	5	17	n.	Dr. F. L. Puffer.	
Caledonia.	Houston.	1,179	17	14.4 ^a	- 1.1	39 ^b	19	-15	4	36 ^c	0.10		0.09	9 ^e	15 ^e	6 ^e			nw.	W. D. Belden.	
Cass Lake.	Cass.	1,300	4																	J. T. Neiss.	
Collegeville.	Stearns.	1,282	17	15.1	+ 1.6	40	19	-21	4	40	0.25		0.25	2.5	1					nw.	C. W. Burns.
Crookston.	Polk.	863	20	9.1	+ 6.0	34	31	-22	3	41	0.12		0.50	0.10	1.2	3	3	12	s.	Fridolin Tembreul.	
Detroit.	Becker.	1,364	14	6.0		40	19	-36	6	41	0.49		0.13	2.0	5.0	3	16	4	11	sw.	A. G. Andersen.
Fairmont (near).	Martin.	1,240	23	13.8	+ 1.1	36	19 ^f	-20	6	29	2.50	+ 1.68	1.40	23.2	4	10	12	9	nw.	George W. Peoples.	
Faribault.	Rice.	1,003	13	12.0	- 2.7	35	17	-25	3	31	0.50	- 0.08	0.17	12.5	7	14	6	11	nw.	W. F. Wherland.	
Farmington.	Dakota.	902	22	13.2	+ 0.4	35	17 ^f	-21	6	29	0.85	- 0.08	0.30	8.0	6	11	8	12	nw.	Dr. A. R. T. Wylie.	
Fergus Falls.	Ottoville.	1,210	18	13.2	+ 4.4	34	19	-24	4	31	0.92	+ 0.28	0.27	9.2	13	10	13	8	nw.	D. F. Akin.	
Fort Ripley.	Crow Wing.	1,136	4	9.5		40	19	-34	6	42	0.50	- 0.08	0.25	7.6	5	16	3	12	s.	Chas. E. Kinsinger.	
Fosston.	Polk.	1,289	1	9.8		34	19	-30	3	35	0.31		0.24	3.5	3	12	11	8	nw.	J. J. Tucker.	
Glencoe.	McLeod.	1,000	14	14.0	- 0.1	36	19 ^f	-24	6	29	1.52	+ 0.95	0.60	15.2	5	13	13	5	nw.	O. N. Hem.	
Grand Meadow.	Mower.	1,338	23	13.4	+ 1.2	39	19	-20	4	37	2.17	+ 1.28	1.12	24.0	6	14	10	7	nw.	C. G. Selvig.	
Hallow.	Kittson.	815	11	5.2	+ 6.2	36	31	-32	4	37	0.10	- 0.49	0.10	1.0	1	19	2	10	s.	C. F. Greening.	
Halstad.	Norman.	870	4	7.6		32	19	-26	4	42	0.09		0.09	1.0	0	1	16	10	n.	D. A. Robertson.	
Hinckley.	Pine.	1,050	5	13.9		33	19	-21	4	36	0.50		0.40	4.0	2	14	9	8	w.	Aaron G. Holstrom.	
International Falls.	Koochiching.	1,112	2																	O. W. Newman.	
Kellher.	Beltrami.	3	11.8			40	19	-31	4	40	0.20		0.20	2.0	1	7	16	8	sw.	Reen Roe.	
Lake Crystal.	Blue Earth.	3	12.6			37	20	-24	6	32	1.77		0.65	18.3	6	12	6	13	s.	A. Gilmour.	
Leech Lake Dam.	Cass.	1,301	22	9.8	+ 5.3	39	19	-28	4	39	0.45	- 0.32	0.28	5.2	4	2	19	10	w.	W. P. Cobb.	
Little Falls.	Morrison.	1,117	4	12.8		35	13	-22	4	34	1.10		0.60	11.0	2	7	16	8	se.	Hans Olson.	
Little Fork.	Koochiching.																		Maurice Coleman.		
Long Prairie.	Todd.	1,299	18	12.6	+ 3.5	42	19	-30	3	37	1.00	+ 0.39	0.80	10.0	2	13</					

TABLE 1.—Climatological data for January, 1910. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days .01 inch or more.	Number of partly cloudy days.		
<i>Minnesota—Cont'd.</i>																		
Taylor's Falls.	Chisago.	759	3	14.0	.....	38	19	-32	6	37	0.62	.....	0.32	8.2	5	15	n.
Warroad.	Roseau.	1,069	1	7.0	.....	36	19	-39	4	45	0.08	.....	0.08	2.0	1	17	s.
West Concord.	Dodge.	1,232	12	12.0	.....	36	19	-24	6	29	1.30	.....	0.60	13.0	5	10	12
Willow River.	Pine.	1,046	12	10.6 ^b + 0.4	32 ^b 18 ^t	-29 ^b	8	32 ^b	29	.....	.....	.....	.....	26	3	2	n.
Windom.	Cottonwood.	1,338	4	14.5	.....	42	19	-25	6	43	1.21	.....	0.70	12.0	3	10	11
Winnebago.	Faribault.	1,100	11	.....	.....	-21	9	.....	1.70	+ 0.98	0.65	20.0	5	7	9	nw.	
Winnibigoshish.	Itasca.	1,300	22	11.7	+ 6.2	41	19	-26	4	36	0.42	.....	-0.34	0.27	5	16	s.
Winona.	Winona.	700	15	15.2	+ 3.2	42	20	-23	7	38	1.07	-0.10	0.40	14.7	5	15	nw.	
Worthington.	Nobles.	979	15	12.6	-2.4	36	19	-21	6 ^t	36	0.75	+ 0.17	0.60	1C.5	3	11	3	
Zumbrota.	Goodhue.	917	15	13.8	-1.6	38	19	-22	9	35	0.87	.....	0.57	10.0	2	14	7
<i>South Dakota.</i>																		
Milbank.	Grant.	1,148	18	13.0 ^t + 0.3	43	31	-20 ^t	4	42 ^t	0.80	+ 0.24	0.48	6.3	5	10	4	nw.	
<i>Wisconsin.</i>																		
Antigo.	Langlade.	1,489	16	14.8	+ 2.0	40	15	-22	7	36	0.56	.....	0.36	5.8	5	18	w.
Barron.	Barron.	1,115	18	11.6	+ 2.5	36	17	-25	4	37	1.19	-0.08	0.80	11.5	6	12	sw.	
Beloit.	Rock.	750	23	18.8	+ 0.2	40	1	-22	7	37	1.97	+ 0.05	1.10	.....	7	10	1
Brodhead.	Green.	812	12	16.8	-3.5	38	17	-33	7	49	2.90	+ 1.65	0.90	28.5	3	10	nw.	
Burnett.	Dodge.	880	6	14.4	.....	37	20	-30	7	35	1.86	.....	1.00	17.0	8	9	sw.
Delavan.	Walworth.	920	17	17.8	-0.8	40	20	-24	7	42	1.19	-0.44	0.50	9.8	7	9	nw.	
Dodgeville.	Iowa.	1,116	11	.....	.....	38	19	-30	7	41	2.00	+ 0.19	0.80	20.0	5	4	17
Downing.	Dunn.	983	8	11.9	+ 3.1	38	19	-30	7	41	2.00	+ 0.19	0.80	20.0	5	4	w.	
Eau Claire.	Eau Claire.	800	19	14.4	+ 1.8	36	25	-20	9	36	1.08	-0.57	0.43	11.2	7	10	nw.	
Pierce.	Ashland.	1,068	2	.....	.....	38	19	-21	7	32	1.33	+ 0.25	0.57	17.5	8	5	18
Glidden.	Wood.	1,519	18	14.7	+ 2.8	41	19	-25	7	38	1.30	+ 0.13	1.05	9.5	3	16	s.	
Grand Rapids.	Grantsburg.	1,021	11	11.2	+ 1.0	40	19	-31	6	46	1.60	+ 0.44	0.80	16.0	5	11	14	
Hancock.	Burnett.	1,095	19	11.2	+ 1.0	40	19	-31	6	46	1.60	+ 0.25	0.60	14.0	3	13	s.	
Hatfield.	Waushara.	1,091	18	13.8	-0.6	38	20	-23	7	44	1.40	+ 0.25	0.60	5.5	6	7	d.	
Hayward.	Jackson.	973	15	11.6 ^t	36	19	-34	7	48	0.72	0.42	0.50	9.5	4	6	s.
Hillsboro.	Sawyer.	1,197	19	9.8	-0.2	35	19	-27	8 ^t	44	0.75	-0.11	0.80	15.0	4	14	e.	
Koepenick.	Vernon.	1,000	19	12.6	-2.3	49	19	-35	7	49	1.50	+ 0.11	0.80	12.0	4	25	nw.	
La Crosse.	Langlade.	1,683	20	13.1	+ 0.6	40	18 ^t	-26	7	41	2.20	-0.19	0.60	7.0	5	12	s.	
Lake Mills.	La Crosse.	714	35	15.9	+ 0.7	41	19	-21	7	32	1.33	+ 0.25	0.57	17.5	8	5	18	
Lancaster.	Jefferson.	897	19	17.2	-0.9	47	1	-22	7	36	2.22	+ 0.70	0.60	21.2	6	13	w.	
Long Lake.	Grant.	1,070	20	16.8	+ 2.2	41	19 ^t	-23	7	35	1.62	+ 0.45	0.75	20.0	5	6	12	
Madison.	Oneida.	1,592	2	11.8	.....	38	19	-27	9	48	0.71	.....	0.33	8.0	6	7	18
Mather.	Dane.	974	32	17.1	+ 0.8	39	20	-18	7	36	2.82	+ 1.26	1.21	28.2	9	8	sw.	
Juneau.	Madison.	982	6	11.8	.....	42	19	-27	7	48	1.30	.....	0.60	13.0	3	10	8
Mauston.	Madison.	882	14	15.1	-0.6	42	20	-26	7	49	1.00	-0.02	0.70	11.5	2	11	sw.	
Meadow Valley.	Jefferson.	974	19	13.7	+ 0.6	39	19	-35	7	46	0.68	-0.19	0.20	12.0	6	8	11	
Medford.	Taylor.	1,420	19	14.6	+ 2.3	36	1	-23	7	37	1.05	+ 0.05	0.35	10.5	5	9	14	
Merrill.	Lincoln.	1,267	4	16.0	.....	49	1	-25	7	52	0.67	.....	0.30	9.8	7	21	sw.
Minocqua.	Vilas.	1,604	8	13.2	.....	41	19	-27	9	45	0.66	.....	0.30	6.0	3	11	17
Mondovi.	Buffalo.	735	2	13.4	.....	44	19	-31	7	44	0.65	.....	0.20	9.8	8	9	nw.
Mount Horeb.	Dane.	1,226	6	18.8	.....	37	20 ^t	-23	6	31	1.63	.....	0.60	13.0	6	10	15
Muscoy.	Grant.	666	1	15.3	.....	42	19	-34	7	48	2.31	.....	1.00	29.0	5	10	9
Neillsville.	Clark.	996	21	14.3 ^t + 0.7	39	19	-30	7	45	0.98	-0.21	0.50	10.0	3	10	9		
New Richmond.	St. Croix.	990	5	12.9	.....	39	20	-24	4 ^t	42	1.30	.....	0.67	13.0	4	10	13
Oscella.	Polk.	806	19	14.4	+ 5.0	38	19	-37	6	53	0.75	-0.27	0.30	11.0	4	16	5	
Prairie du Chien.	Columbia.	809	14	16.0	-2.3	39	17 ^t	-32	7	41	0.87	-0.36	0.60	19.6	4	13	9	
Prentice.	Crawford.	690	23	15.6	-2.2	46	19	-28	7	46	1.71	+ 0.38	0.84	22.5	5	6	12	
Rhinelander.	Price.	1,551	12	10.8	+ 0.5	33	1	-30	7	45	1.96	+ 0.46	0.40	8.8	5	7	23	
Sauk City.	Oneida.	1,550	4	13.8	.....	38	19	-23	7	39	0.48	.....	0.20	9.9	8	9	14
Shullsburg.	Sauk.	758	2	17.7 ^t	.....	40	20	-31	7 ^t	37 ^t	1.85	.....	1.00	18.5	3	6	18
Solon Springs.	Lafayette.	1,019	4	16.0	.....	37	19	-23	7	34	2.63	.....	1.02	27.5	5	13	s.
Spooner.	Douglas.	1,083	4	9.8	.....	35	19	-28	7 ^t	42	1.40	.....	0.80	14.0	3	11	17
Stanley.	Washburn.	1,104	15	12.1	+ 1.6	34	17 ^t	-21	4	31	0.58	-0.46	0.41	8.8	4	17	w.	
Stevens Point.	Chippewa.	1,082	6	14.0	.....	37	19	-24	7	40	1.27	.....	0.46	11.0	3	9	14
Valley Junction.	Portage.	1,113	17	14.4	-0.1	37	20	-26	7	43	1.57	+ 0.57	0.75	17.1	8	14	nw.	
Viroqua.	Monroe.	930	18	14.6	+ 0.9	40	19	-25	7	41	1.32	+ 0.32	0.40	13.2	10	11	14	
Vudessare.	Vilas.	1,600	2	11.0	.....	36	1	-21	9	38	1.06	.....	0.24	11.5	7	9	13
Watertown.	Jefferson.	824	19	15.4	-2.4	38	20	-26	7	38	2.42	+ 0.75	0.70	23.8	11	6	16	
Waukesha.	Waukesha.	864	14	18.6	-6.2	40	20	-21	7	34	2.37	+ 0.89	1.10	23.8	7	4	19	
Wausau.	Marathon.	1,212	17	16.3	+ 3.3	46	1	-20	7	56	0.75	-0.59	0.32	13.0	5	8	14	
Weyerhaeuser.	Rusk.	1,297	3	11.2	.....	35	17 ^t	-26	8	40	0.97	.....	0.38	10.0	5	10	13
Whitehall.	Trempealeau.	675	18	13.1	-0.2	38	20	-33	7	43	0.90	+ 0.04	0.30	9.0	4	6	20	
<i>Iowa.</i>																		
Albia.	Monroe.	950	12	20.4	-3.3	47	19	-19	6	41	1.48	+ 0.06	0.63	8.0	3	11	16	
Algoma ^a .	Kossuth.	1,213	36	14.4	+ 1.1	38	19	-22	6	44	1.33	+ 0.54	0.60	16.0	7	18	10	
Alta.	Buena Vista.	1,513	19	14.8	-1.6	40	19	-18	6	38	1.36	+ 0.72	.....	14.0	10	12	13
Amana.	Iowa.	721	34	18.3	+ 2.0	42	19	-26	7	39	1.99	+ 0.52	0.64	9.3	7	11	11	
Ames.	Story.	926	12	17.2	-0.3	42	19	-23	6	45	1.30	+ 0.38	0.60	8.0	4	15	n.	
Baxter.	Jasper.	998	10	18.6	-1.7	49	19	-21	6	37	1.41	+ 0.53	0.55	12.6	9	16	4	
Belle Plaine.	Benton.	828	20	18.2	0.0	45	19	-21	6	37	2.45	+ 0.65	0.60	21.0	9	9	16	
Belmond.	Wright.	137	7	20.4	.....	37	19 ^t	-25	6	35	1.51	.....	0.45	14.2	16	1	

MONTHLY WEATHER REVIEW.

JANUARY, 1910

TABLE 1—Climatological data for January, 1910. District No. 5—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
<i>Iowa—Cont'd.</i>																			
Fairfield.	Jefferson.	26	22.2	-4.6	50	19	-23	7	45	2.02	+0.32	0.58	5.9	8	16	13	2	se.	
Fayette [§] .	Fayette.	1,003	20	13.0	-3.1	42	19	-32	7	41	2.13	+0.85	1.00	23.0	5	17	3	11	nw.
Forest City [§] .	Winnebago.	1,226	16	15.8	-0.4	39	19	-23	9	54	2.40	+1.76	1.40	2.0	4	11	8	12	w.
Fort Dodge.	Webster.	1,126	10	14.4 ^a	-2.7	42	19	-22	9	53	1.80	+1.16	0.60	18.0	6	15	9	16	nw.
Fort Madison.	Lee.	516	61							2.06	+0.10	1.50	3.1	4	9	6	16	w.	
Gilman.	Marshall.	1,052	11															J. L. Wylie.	
Grand Meadow.	Clayton.	1,180	19	15.8	+0.3	40	19	-25	7	35	1.85	+0.68	0.90	18.2	9	11	10	10	nw.
Greene.	Butler.	12	14.6	-3.9	40	19	-26	6	38	1.02	+0.38	0.40	4.5	6	5	12	14	w.	
Grinnell.	Poweshiek.	1,123	18	20.0	-0.2	45	19	-20	6	36	1.68	+0.39	0.85	14.2	7	13	8	12	sw.
Grundy Center [§] .	Grundy.	976	19	17.8	+0.9	42	18	-24	7	41	2.10	+1.28	1.00	21.0	4	14	6	11	nw.
Guthrie Center [§] .	Guthrie.	1,077	15	19.4	-3.3	41	19	-21	6	31	2.08	+1.49	1.23	8.8	7	17	3	11	nw.
Hampton.	Franklin.	1,155	20	16.6	+1.1	40	19	-20	6	40	1.85	+0.81	0.85	20.0	3	6	12	13	nw.
Humboldt.	Humboldt.	1,095	22	16.2	-0.6	40	19	-28	6	43	2.65	+2.10	1.47	26.5	5	18	0	13	nw.
Independence [§] .	Buchanan.	921	46	15.1	-0.1	41	19	-30	7	38	2.25	+1.02	1.20	22.5	5	16	1	14	nw.
Indiana.	Warren.	980	19	21.0	+0.8	44	19	-13	6	32	1.08	+1.00	12.0	6	9	7	15	nw.	
Iowa City.	Johnson.	633	50	16.4	-2.7	47	19	-26	6	50	1.79	+0.05	0.58	10.0	8	11	5	15	nw.
Iowa Falls.	Hardin.	1,170	17	12.2	-3.0	39	18	-30	6	56	1.77	+0.37	0.70	17.7	7	15	2	14	nw.
Jefferson [§] .	Greene.	11																U. S. Weather Bureau.	
Keokuk.	Lee.	547	39	27.0	+3.3	52	19	-8	6	28	1.61	-0.08	0.78	3.0	7	9	11	11	nw.
Kenoshaque.	Van Buren.	644	18	21.4	-1.7	48	19	-22	6	49	1.93	+0.56	0.68	7.5	7	8	11	12	nw.
Knoxville [§] .	Marion.	920	15	22.0	-1.1	45	19 ^b	-14	6	33	1.90	+0.55	0.70	9.5	5	17	4	10	nw.
Lacona.	Warren.	11									3.36	+1.69	1.52	14.0	9	7	19	5	
Le Claire.	Scott.	578	10								1.89	+0.46	0.73	9.7	11				Miss M. T. Disney.
Marshalltown.	Marshall.	947	18	16.5	-2.9	46	19	-22	7	53	1.92	+0.92	1.00	13.0	8	12	6	13	nw.
Mason City [§] .	Cerro Gordo.	1,132	13	13.1	-2.0	37	19 ^b	-26	7	37	1.35	+0.20	0.85	13.5	5	11	2	12	nw.
Mount Pleasant [§] .	Henry.	729	29	23.0	+2.0	44	19	-16	6	30	1.53	+0.07	0.55	6.5	9	12	6	13	nw.
Muscatine.	Muscatine.	50									1.73	-0.18	0.60	6.9	8				William Molis.
New Hampton [§] .	Chickasaw.	1,169	13	12.1	-3.7	36	20	-26	8	33	2.10	+1.27	1.00	21.0	5	12	7	12	n.
Newton [§] .	Jasper.	944	22	19.8	+2.3	40	19	-17	6	52	1.71	+0.20	0.60	11.0	3	19	3	9	s.
Northwood [§] .	Worth.	1,222	14	11.7 ^c	-4.6	36 ^d	17 ^b	-24	6	33 ^d	2.20	+1.35	0.90	21.5	7	17	7	7	nw.
Olin [§] .	Jones.	760	12															C. M. Miles.	
Osage.	Mitchell.	1,184	23	15.0	+1.0	38	19	-24	6	31	1.95	+1.03	1.00	24.0	3	12	5	14	nw.
Oskaloosa [§] .	Mahaska.	843	34	21.2	+2.0	45	19	-22	6	36	2.32	+1.40	0.67	8.5	8	15	1	15	
Ottumwa.	Wapello.	649	15	24.3	-0.2	51	19	-16	6	36	1.92	+0.32	0.82	6.7	5	10	17	17	nw.
Pella.	Marion.	877	8	20.3	-2.9	42	19 ^b	-28	6	42	1.59	+0.47	0.51	10.9	5	20	1	10	nw.
Perry [§] .	Dallas.	975	9	18.7	-2.0	50	19	-24	6	52	2.10	+1.28	1.00	17.5	5	14	6	11	n.
Plover.	Pocahontas.	1,426	14	14.7	-3.3	39	19 ^b	-22	6	33	1.10	+0.52	0.65	11.0	3	19	4	8	nw.
Pocahontas [§] .	do.	1,248	6	15.2		40	19	-20	6	34	1.04		0.45	10.5	6	16	3	12	nw.
Ridgeway [§] .	Winnebago.	1,215	12	16.1	-3.1	42	19	-23	6	35	1.99	+0.01	1.05	12.5	8	14	6	11	s.
Rockwell City [§] .	Calhoun.	14	18.9	-0.9	40	18 ^b	-17	6	35	1.80	+1.10	0.70	18.0	5	15	5	11		
Sac City.	Eaton.	1,278	34	17.1	-0.3	43	27	-17	6	31	1.40	+0.42	0.70	14.0	3	8	9	14	nw.
St. Charles [§] .	Madison.	1,070	9	22.6	-0.2	49	19	-15	6	35	2.16	+1.01	0.60	14.6	10	14	8	9	nw.
Sigourney [§] .	Keokuk.	877	14	21.2	-1.6	43	19	-19	6	38	1.44	-0.15	0.53	10.0	7	19	3	14	nw.
Stockport.	Van Buren.	8	21.7		49	19	-25	6	47	1.56	-0.08	0.72	5.0	7	14	3	14	nw.	
Storm Lake.	Buena Vista.	1,440	21	16.6 ^c	-0.8	39 ^d	19	-19 ^b	6	29 ^b	0.86	+0.15	0.65	17.5	3	15	9	7	
Stuart.	Cedar.	1,216	11	19.8	-0.8	40	19	-18	6	39	2.07	+0.58	0.84	9.5	6	15	9	17	nw.
Toledo.	Tama.	807	11	19.8	-0.8	40	19	-18	6	39	2.07	+0.58	0.84	9.5	6	15	9	17	nw.
Wapello.	Louisa.	856	16	17.8	-1.3	42	19	-26	9	36	1.40	+0.45	1.00	14.0	3	16	7	8	nw.
Washington.	Washington.	588	12	23.0 ^c	-2.1	43	28	-14 ^b	6	30 ^b	1.39	+0.66	0.51	18.0	6				nw.
Waterloo.	Black Hawk.	769	28	21.0	+1.9	47	19	-19	6	34	1.73	+0.17	0.66	6.7	7	9	11	11	n.
Waukee.	Dallas.	862	27	15.0	-2.5	43	19	-25	7	49	1.49	+0.37	0.63	14.0	4	11	9	11	nw.
Waverly [§] .	Bremer.	1,039	7	18.6	-3.5	44	19	-19	6	32	1.42	-0.26	0.48	8.8	9	13	7	11	nw.
Webster City [§] .	Hamilton.	948	14	14.4	-3.5	49	19	-29	7	37	1.82	+0.63	0.70	16.2	5	9	13	7	nw.
West Bend [§] .	Palo Alto.	1,197	17	14.9	-1.9	38	19	-22	6	36	1.25	+0.55	0.65	12.0	7	11	8	12	s.
Whittem [§] .	Hardin.	1,036	13	15.8 ^c	-2.6	40	19	-23 ^b	6	67	1.30	+0.44	0.60	13.0	3	9	13	9	nw.
Winterset [§] .	Madison.	1,129	19	20.9	-0.5	42	25	-19	6	31	1.72	+0.81	0.90	12.5	7	12	5	14	n.
Zearing.	Story.	6	15.5		42	19	-30	7	43	2.90		1.00		25.0	7	15	5	11	nw.
<i>Missouri.</i>																			
Corin.	Scotland.	700	24								2.12	+0.45	1.07	3.9	5	10	7	14	nw.
Hannibal.	Marion.	534	18	28.8	+1.9	54	19	-12	6	31	1.99	-0.22	0.88	3.4	9	11	6	14	nw.
Louisiana.	Pike.	500	32	29.8	+2.0	50	19	-12	6	32	1.97	-0.12	1.10	7.2	7	14	6	11	sw.
Mexico.	Audrain.	797	32	29.2	+0.2	55	19	-1	6	36	2.70	+0.60	1.39	8.0	9	14	4	13	w.
Steffenville.	Lewis.	576	17	28.1	-0.8	52	19	-6	6	36	2.40	-0.01	1.96	7.9	7	15	5	11	w.
Sublett.	Adair.	1,000	30	26.4	-0.0	51	25 ^b	-17	6	33	0.45	-1.28	0.40	4.5	2	8	10	13	w.
Warenton.	Warren.	865	20	29.4	-0.1	59	25	0	6	38	2.81	+0.21	1.65	5.5	7	7	9	15	s.
<i>Indiana.</i>																			
Collegeville.	Jasper.	11	26.4	-0.3	54	28	-5	7	27	2.85	+0.46	0.85	3.1	9	6	11	14	nw.	
Knox.	Starke.	716	5	25.3		47	26	-6	7	32	3.07		3.5	6.7	11	6	12	13	w.
Laporte.	Laporte.	810	14	22.2 ^a	-2.9	44	20 ^b	-15 ^b	7										

TABLE 1.—*Climatological data for January, 1910. District No. 5—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Observers				
				Mean.	Departure from the normal.		Highest.	Date.	Lowest.	Date.	Greatest daily range.		Total.	Departure from the normal.		Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days, .01 inch or more.	Number of partly cloudy days.	Number of clear days.	
					Date.	Range.					Date.	Range.		Date.	Range.						
<i>Illinois—Cont'd.</i>																					
Havana.	Mason.	475	18	27.6	+ 0.1	46	19	- 3	6	32	1.88	- 0.32	0.78	2.0	5	5	19	7	w.		
Henry.	Marshall.	500	22	23.6	+ 0.3	47	1	- 11	6	41	2.24	+ 0.31	1.80	5.5	8	14	7	10	nw.		
Hillsboro.	Montgomery.	675	16	30.7	+ 0.1	54	19	- 2	6	24	2.26	- 0.36	0.95	1.0	5	9	1	21	se.		
Joliet.	Will.	541	19	23.3	- 1.2	47	2	- 10	7	34	2.52	+ 0.43	0.62	7.4	10	11	6	14	nw.		
Kishwaukee.	Winnebago.	730	22	18.8	- 1.6	39	20	- 23	7	42	1.54	- 0.72	0.52	14.5	11	11	9	11	sw.		
La Grange.	Cook.	657	18	22.6	- 0.7	42	20†	- 13	7	33	2.35	+ 0.36	0.72	9.7	10	10	4	17	nw.		
La Harpe.	Hancock.	698	31	25.4	+ 1.4	47	19	- 9	6	34	0.62	- 1.74	0.30	2.5	3	12	3	16	nw.		
Lansark.	Carroll.	883	21	16.8	- 3.9	38	20†	- 31	7	44	1.39	- 0.19	0.43	10.8	9	13	7	11	s.		
La Salle.	La Salle.	536	33	22.2	- 0.1	44	26	- 11	6	34	1.93	- 0.23	0.56	3.2	12	9	6	16	w.		
Lincoln.	Logan.	482	22	27.3	0.0	35	19†	- 4	6	25	2.71	+ 0.40	1.10	5.2	7	8	10	13	s.		
Martinton.	Iroquois.	633	23	23.8	- 0.3	47	26	- 9	7	43	2.55	+ 0.48	0.87	2.3	8	7	10	14	w.		
Mascoutah.	St. Clair.	425	20	33.9	+ 2.9	67	1	5	6	32	2.33	- 0.43	1.49	0.2	7	9	12	10	nw.		
Minonk.	Woodford.	745	17	24.0	- 0.1	48	19	- 7	7	35	1.45	- 0.38	0.58	5.0	9	14	9	3	nw.		
Monmouth.	Warren.	784	18	23.7	+ 0.7	46	19	- 10	6	31	1.92	- 0.10	0.75	5.5	8	12	8	11	nw.		
Morrison.	Whiteside.	685	16	19.4	- 1.9	40	20	- 28	7	42	1.82	+ 0.07	0.48	14.1	10	13	6	12	nw.		
Morrisonville.	Christian.	638	11	29.0	+ 0.2	50	18†	0	6	24	1.77	- 0.48	0.97	1.2	7	11	10	10	nw.		
Mount Vernon.	Jefferson.	511	18	32.8	+ 0.1	58	27	6	7	35	2.27	- 0.79	1.00	1.7	8	11	5	15	n.		
Oregon.	Ogle.	702	1	18.8	...	40	19†	- 25	7	38	1.72	- 0.50	1.72	13	8	5	18	w.			
Ottawa.	La Salle.	500	24	22.8	- 1.3	43	26	- 11	7†	38	2.78	+ 0.51	0.70	10.4	10	4	3	24	nw.		
Pana.	Christian.	692	24	29.4	+ 1.0	52	26	1	6	31	1.90	- 0.67	0.97	1.0	7	18	2	11	nw.		
Peoria.	Peoria.	600	33	24.4	+ 1.3	45	19	- 8	6	30	1.97	- 0.23	0.78	2.3	11	7	13	nw.			
Pontiac.	Livingston.	546	8	24.7	...	44	19†	- 9	7	34	1.78	- 0.70	0.70	3.0	7	7	17	sw.			
Riley.	McHenry.	956	51	19.4	+ 0.8	38	20	- 21	7	30	2.23	+ 0.31	1.42	12.1	10	4	10	17	nw.		
Rockford.	Winnebago.	763	18	18.4	- 3.0	39	19†	- 17	6†	36	2.06	- 0.50	0.53	18.3	9	9	3	19	...		
Rushville.	Schuyler.	670	19	27.5	+ 1.2	50	19	- 4	6	32	1.81	- 0.48	1.09	3.5	5	5	21	w.			
St. Charles.	Kane.	700	15	21.1	- 1.7	46	26	- 18	7	37	2.25	+ 0.20	0.72	12.6	8	8	12	11	nw.		
St. Peter.	Fayette.	500	8	31.0	...	54	19	4	6	24	2.22	...	1.12	1.0	5	11	2	18	nw.		
Springfield.	Sangamon.	644	33	28.0	+ 1.7	49	19	- 1	6	26	1.68	- 0.57	0.90	2.4	8	11	7	13	nw.		
Streator.	La Salle.	626	17	21.8	- 2.6	43	25	- 10	6†	37	2.45	+ 0.37	0.80	2.0	7	2	19	10	w.		
Sullivan.	Moultrie.	530	10	30.0	+ 1.6	54	19	0	6	28	2.11	- 0.26	0.95	1.0	5	9	8	14	nw.		
Sycamore.	De Kalb.	855	30	19.8	0.0	41	1	- 16	6†	40	1.25	- 0.62	0.35	10.9	7	8	2	21	sw.		
Tilden.	Randolph.	500	24	33.4	+ 0.9	60	19	6	6	30	2.45	- 0.06	1.05	1.0	8	11	6	14	s.		
Tiskilwa.	Bureau.	798	16	20.9	- 2.7	41	19	- 15	6†	34	2.57	+ 0.47	0.65	9.5	9	16	2	13	w.		
Walnut.	do.	717	19	21.8	- 1.3	40	20†	- 14	6	32	1.86	- 0.08	0.69	11.0	10	11	7	13	s.		
White Hall.	Greene.	573	2	28.9	...	55	19	0	6†	34	1.90	...	0.79	4.2	7	13	2	16	w.		
Windsor.	Shelby.	681	11	29.3	+ 2.4	53	19	1	6	27	1.73	- 0.92	0.50	2.3	10	8	6	17	nw.		
Winnebago.	Winnebago.	900	23	18.4	- 2.3	39	19†	- 22	7	38	2.41	+ 0.41	0.60	21.0	10	14	6	11	w.		
Yorkville.	Kendall.	584	23	21.0	- 0.7	42	26	- 15	7	42	1.49	- 0.45	0.50	8.1	8	7	5	19	w.		
Zion.	Carroll.	938	16	17.2	- 3.6	41	20	- 25	7	45	2.02	+ 0.34	0.80	19.5	7	14	2	15	w.		

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

* Precipitation included in that of the next measurement.

** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

Data are from standard instruments not supplied by the U. S. Weather Bureau.

Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

Estimated by observer.

Precipitation for the 24 hours ending on the morning when it is measured.

T Precipitation is less than 0.01 inch rain or melted snow.

F. & C. Borgelt.
Dr. F. A. Powell.
Ira L. Woodward.
F. M. Muhlig.
Geo. Stevens.
Prof. F. E. Sanford.
Jno. S. Campbell.
M. N. Wertz.
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Prof. C. S. Oglevee.
Jos. H. Peltier.
Geo. Henrich.
O. M. Davison.
Hugh R. Moffet.
S. A. Maxwell.
J. D. Lewis.
Theo. P. Stelle.
Samuel Ray.
Miss M. M. Harris.
C. W. Sibley.
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Dr. R. A. Pritchett.
Herbert Rose.
Frank Osborn.
Herman A. Grimwood.
Robt. F. Gillogly.

MONTHLY WEATHER REVIEW.

JANUARY, 1910

TABLE 2.—*Daily precipitation for January, 1910. District No. 5, Upper Mississippi Valley.*

TABLE 2.—*Daily precipitation for January, 1910. District No. 5—Continued.*

TABLE 2.—*Daily precipitation for January, 1910. District No. 5—Continued.*

TABLE 2.—*Daily precipitation for January, 1910. District No. 5—Continued.*

MONTHLY WEATHER REVIEW.

JANUARY, 1910

TABLE 3.—*Maximum and minimum temperatures at selected stations, January, 1910. District No. 5, Upper Mississippi Valley.*

TABLE 3.—Maximum and minimum temperatures at selected stations, January, 1910. District No. 5—Continued.